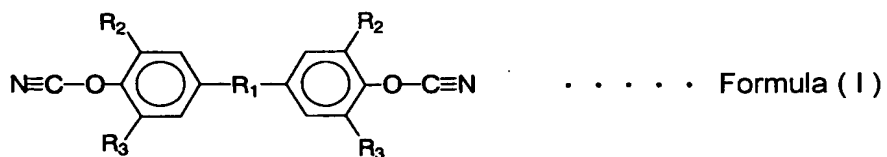
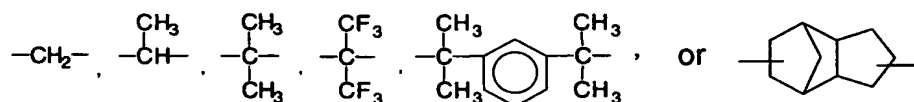


Claims:

1. A resin composition for printed wiring board which comprises a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, and an epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule.
2. The resin composition for printed wiring board according to Claim 1, wherein the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule is contained in an amount of 10 to 250 parts by weight based on 100 parts by weight of the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof.
3. The resin composition for printed wiring board according to Claim 1 or 2, which further comprises a polyphenylene ether resin.
4. The resin composition for printed wiring board according to any one of Claims 1 to 3, wherein the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof is at least one kind selected from the group consisting of a cyanate ester compound represented by the formula (I):

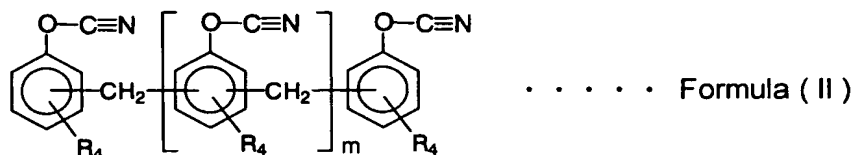


wherein R_1 represents



R_2 and R_3 each represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, and each may be the same or different from each other,

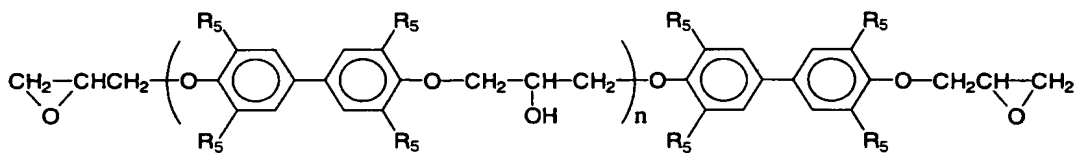
and a cyanate ester compound represented by the formula (II):



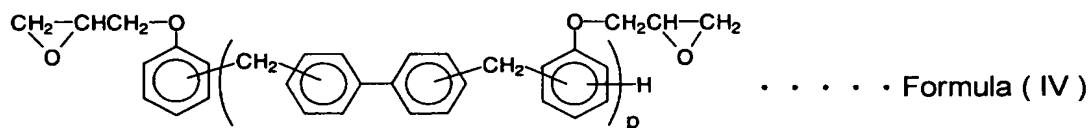
wherein R_4 represents a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, m represents an integer of 1 to 7,

and a prepolymer thereof.

5. The resin composition for printed wiring board according to any one of Claims 1 to 4, wherein the epoxy resin having a biphenyl structure in the molecule in the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule is at least one selected from the group consisting of an epoxy resin represented by the formula (III):



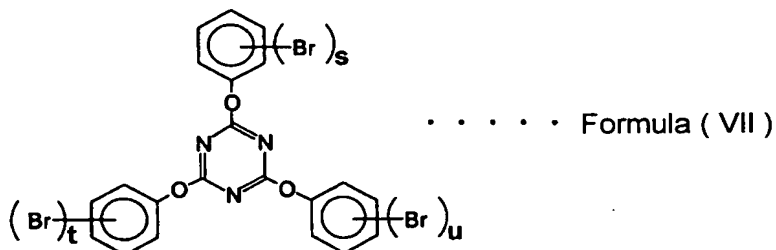
wherein R_5 each represent a hydrogen atom or a methyl group, n represents an integer of 0 to 6, and an epoxy resin represented by the formula (IV):



wherein p represents an integer of 1 to 5.

6. The resin composition for printed wiring board according to any one of Claims 1 to 5, wherein the composition further comprises, as a flame retardant, at least one selected from the group consisting of 1,2-dibromo-4-(1,2-

dibromoethyl)cyclohexane, tetrabromocyclooctane, hexabromocyclododecane, bis(tribromophenoxy)ethane, a brominated triphenylcyanurate represented by the formula (VII):



5 wherein s, t and u each represent an integer of 1 to 5, and each may be the same value or different from each other,

a brominated polyphenylene ether and a brominated polystyrene.

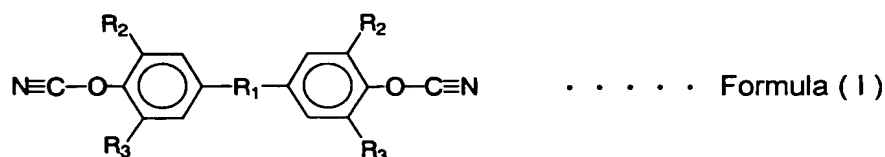
10 7. The resin composition for printed wiring board according to any one of Claims 1 to 6, which further comprises an antioxidant.

8. A resin composition for printed wiring board which comprises a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof,
15 an epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule, and a monovalent phenol compound.

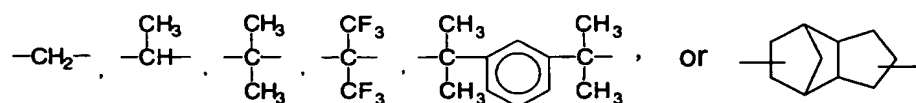
9. The resin composition for printed wiring board according to Claim 8, wherein the epoxy resin containing at least one
20 kind of an epoxy resin having a biphenyl structure in the molecule is contained in an amount of 10 to 250 parts by weight based on 100 parts by weight of the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, and the monovalent phenol
25 compound is contained in an amount of 2 to 60 parts by weight based on the same.

10. The resin composition for printed wiring board according to Claim 8 or 9, which further comprises a polyphenylene ether resin.
30

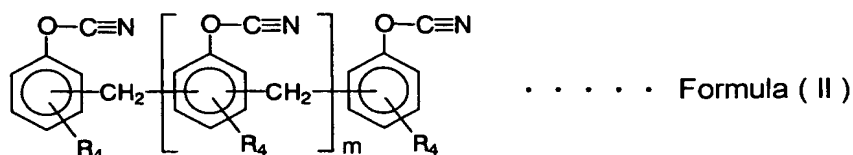
11. The resin composition for printed wiring board according to any one of Claims 8 to 10, wherein the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof is at least one selected from the group consisting of a cyanate ester compound represented by the formula (I):



wherein R_1 represents



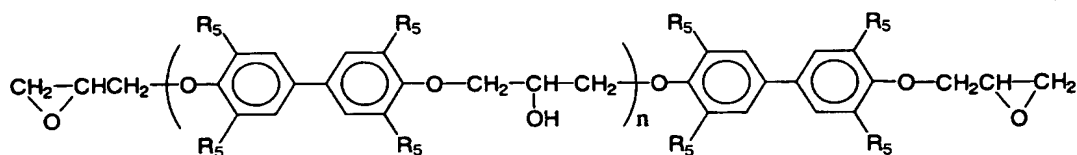
- 10 R_2 and R_3 each represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, and each may be the same or different from each other, and a cyanate ester compound represented by the formula (II):



- 15 wherein R_4 represents a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, m represents an integer of 1 to 7, and a prepolymer thereof.

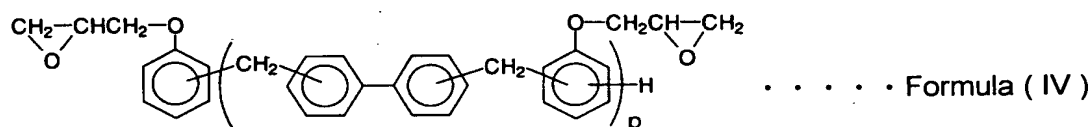
- 20 12. The resin composition for printed wiring board according to any one of Claims 8 to 11, wherein the epoxy resin having a biphenyl structure in the molecule in the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule is at least one
- 25 selected from the group consisting of an epoxy resin repre-

sented by the formula (III):



Formula (III)

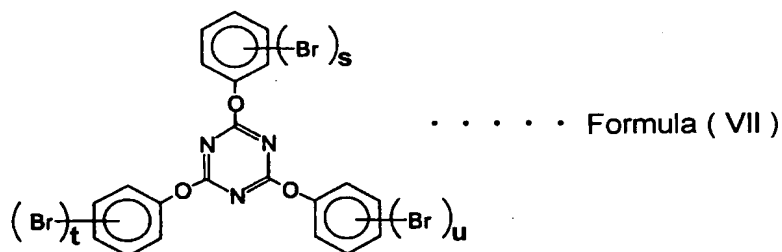
wherein R₅ each represent a hydrogen atom or a methyl group, n represents an integer of 0 to 6,
 5 and an epoxy resin represented by the formula (IV):



Formula (IV)

wherein p represents an integer of 1 to 5.

13. The resin composition for printed wiring board according to any one of Claims 8 to 12, wherein the composition
 10 further comprises, as a flame retardant, at least one selected from the group consisting of 1,2-dibromo-4-(1,2-dibromoethyl)cyclohexane, tetrabromocyclooctane, hexabromocyclododecane, bis(tribromophenoxy)ethane, a brominated triphenylcyanurate represented by the formula (VII):



Formula (VII)

15

wherein s, t and u each represent an integer of 1 to 5, and each may be the same value or different from each other,

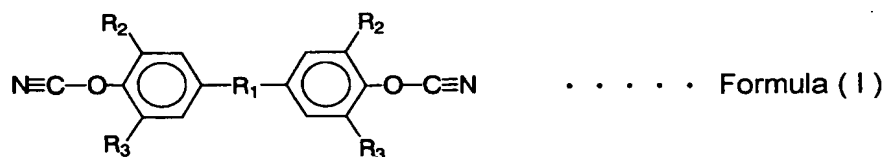
a brominated polyphenylene ether and a brominated polystyrene.

20

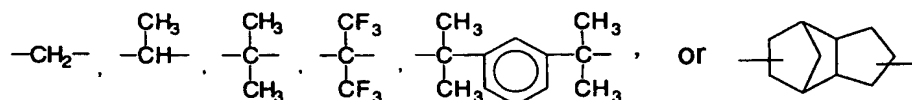
14. The resin composition for printed wiring board according to any one of Claims 8 to 13, which further comprises

antioxidant.

15. A resin composition for printed wiring board which comprises a phenol-modified cyanate ester oligomer obtainable by reacting a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof a monovalent phenol compound, and an epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule.
16. The resin composition for printed wiring board according to Claim 15, wherein the phenol-modified cyanate ester oligomer is a phenol-modified cyanate ester oligomer obtainable by reacting 100 parts by weight of Component (A) and 2 to 60 parts by weight of Component (C), and Component (B) is contained in an amount of 10 to 250 parts by weight.
17. The resin composition for printed wiring board according to Claim 15 or 16, which further comprises a polyphenylene ether resin.
18. The resin composition for printed wiring board according to any one of Claims 15 to 17, wherein the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof is at least one selected from the group consisting of a cyanate ester compound represented by the formula (I):

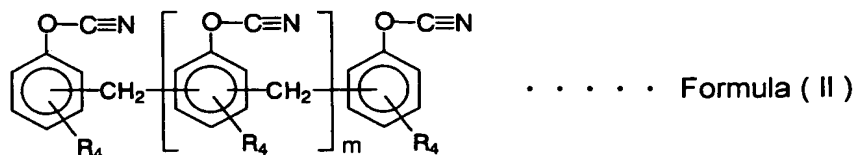


wherein R_1 represents



R_2 and R_3 each represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, and each may be the same or different from each other,

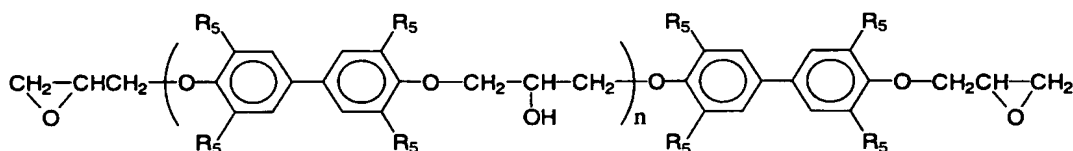
and a cyanate ester compound represented by the formula (II):



5 wherein R_4 represents a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, m represents an integer of 1 to 7,

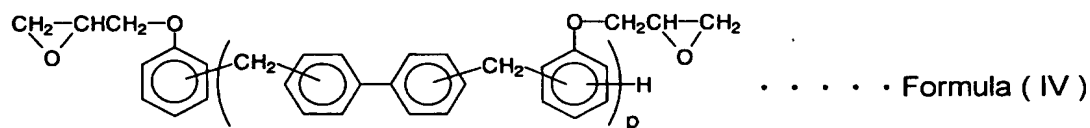
and a prepolymer thereof.

19. The resin composition for printed wiring board according to any one of Claims 15 to 18, wherein the epoxy resin
10 having a biphenyl structure in the molecule in the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule is at least one selected from the group consisting of an epoxy resin represented by the formula (III):



15

 wherein R_5 each represent a hydrogen atom or a methyl group, n represents an integer of 0 to 6, and an epoxy resin represented by the formula (IV):

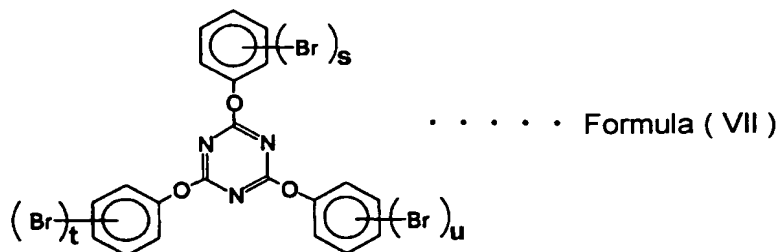


20

 wherein p represents an integer of 1 to 5.

20. The resin composition for printed wiring board according to any one of Claims 15 to 19, wherein the composition further comprises at least one selected from the group consisting of 1,2-dibromo-4-(1,2-dibromoethyl)cyclohexane,

tetrabromocyclooctane, hexabromocyclododecane, bis(tri-bromophenoxy)ethane, a brominated triphenylcyanurate represented by the formula (VII):



5 wherein *s*, *t* and *u* each represent an integer of 1 to 5, and each may be the same value or different from each other,

a brominated polyphenylene ether and a brominated polystyrene, as a flame retardant.

10 21. The resin composition for printed wiring board according to any one of Claims 15 to 19, which further comprises an antioxidant.

22. A resin composition for printed wiring board which comprises a phenol-modified cyanate ester oligomer
 15 obtainable by reacting a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof a monovalent phenol compound, and
 an epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule, and
 20 a monovalent phenol compound.

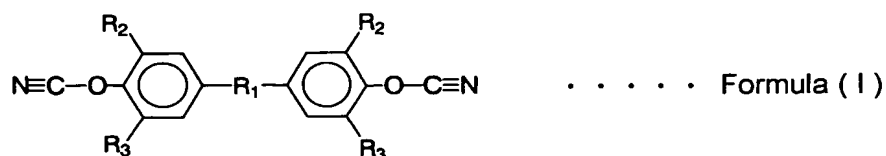
23. The resin composition for printed wiring board according to Claim 22, wherein the phenol-modified cyanate ester oligomer is a phenol-modified cyanate ester oligomer obtainable by reacting 100 parts by weight of the cyanate
 25 ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, 0.4 parts by weight or more and less than 60 parts by weight of the monovalent phenol compound, and the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in
 30 the molecule is contained in an amount of 10 to 250 parts

by weight, and

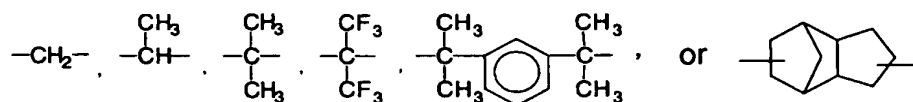
the monovalent phenol compound is additionally contained in a total amount of 2 to 60 parts by weight which is the sum of the amount with the monovalent phenol compound to be used for formation of the phenol-modified cyanate ester oligomer.

24. The resin composition for printed wiring board according to Claim 22 or 23, which further comprises a polyphenylene ether.

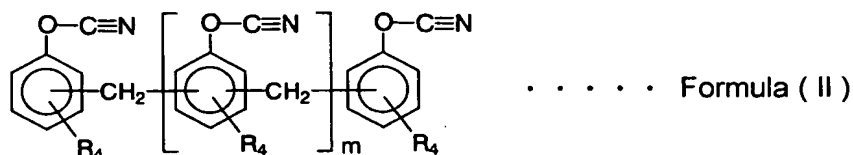
25. The resin composition for printed wiring board according to any one of Claims 22 to 24, wherein the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof is at least one selected from the group consisting of a cyanate ester compound represented by the formula (I):



wherein R_1 represents



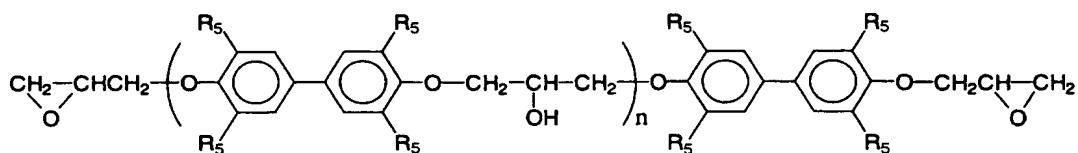
R_2 and R_3 each represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, and each may be the same or different from each other, and a cyanate ester compound represented by the formula (II):



wherein R_4 represents a hydrogen atom or an alkyl

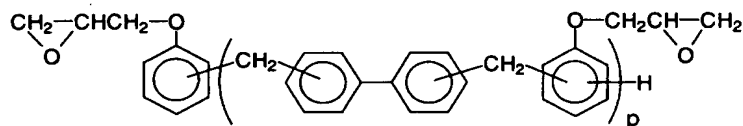
group having 1 to 4 carbon atoms, m represents an integer of 1 to 7, and a prepolymer thereof.

26. The resin composition for printed wiring board according to any one of Claims 22 to 25, wherein the epoxy resin having a biphenyl structure in the molecule in the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule is at least one selected from the group consisting of an epoxy resin represented by the formula (III):



. Formula (III)

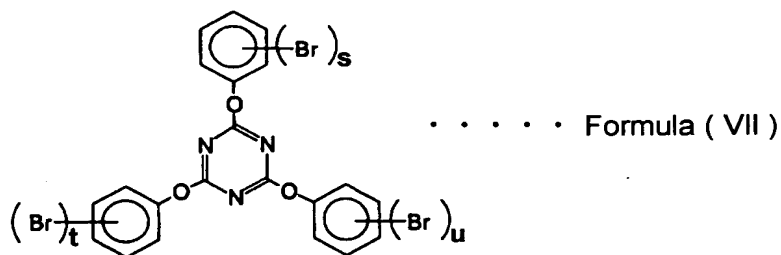
wherein R₅ each represent a hydrogen atom or a methyl group, n represents an integer of 0 to 6, and an epoxy resin represented by the formula (IV):



. Formula (IV)

- 15 wherein p represents an integer of 1 to 5.

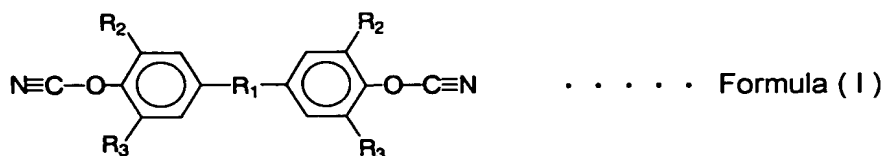
27. The resin composition for printed wiring board according to any one of Claims 22 to 26, wherein the composition further comprises, as a flame retardant, at least one selected from the group consisting of 1,2-dibromo-4-(1,2-dibromoethyl)cyclohexane, tetrabromocyclooctane, hexabromocyclododecane, bis(tribromophenoxy)ethane, a brominated triphenylcyanurate represented by the formula (VII):



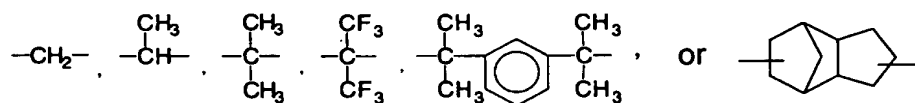
wherein s, t and u each represent an integer of 1 to 5, and each may be the same value or different from each other,

- 5 a brominated polyphenylene ether and a brominated polystyrene.
28. The resin composition for printed wiring board according to any one of Claims 22 to 27, wherein the composition further comprises an antioxidant.
- 10 29. A resin composition for printed wiring board which comprises an epoxy/phenol-modified cyanate ester oligomer obtained by reacting a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, an epoxy resin containing at least one kind of an
- 15 epoxy resin having a biphenyl structure in the molecule, and a monovalent phenol compound.
30. The resin composition for printed wiring board according to Claim 29, wherein the epoxy/phenol-modified cyanate ester oligomer is an epoxy/phenol-modified cyanate ester
- 20 oligomer obtained by reacting 100 parts by weight of the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, 10 to 250 parts by weight of the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the
- 25 molecule, and 2 to 60 parts by weight of the monovalent phenol compound.
31. The resin composition for printed wiring board according to Claim 29 or 30, wherein the composition further comprises a polyphenylene ether resin.
- 30 32. The resin composition for printed wiring board accord-

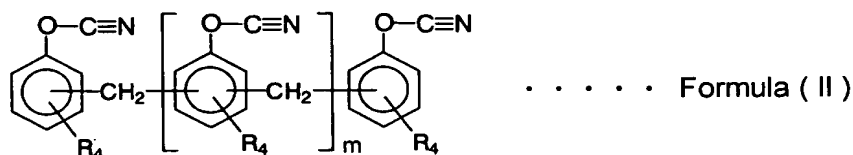
ing to any one of Claims 29 to 31, wherein the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof is at least one selected from the group consisting of a cyanate ester compound represented by the formula (I):



wherein R_1 represents



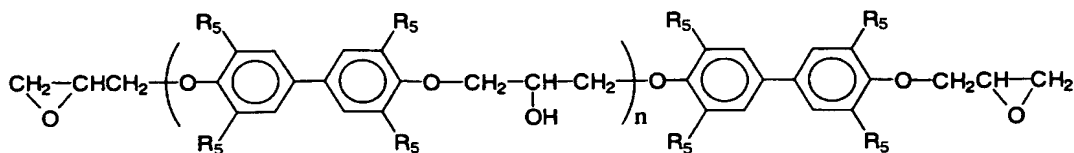
R_2 and R_3 each represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, and each may be the same or different from each other, and a cyanate ester compound represented by the formula (II):



wherein R_4 represents a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, m represents an integer of 1 to 7,

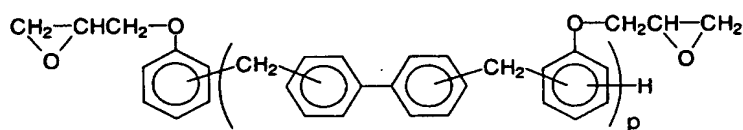
and a prepolymer thereof.

33. The resin composition for printed wiring board according to any one of Claims 29 to 32, wherein the epoxy resin having a biphenyl structure in the molecule in the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule is at least one selected from the group consisting of an epoxy resin represented by the formula (III):



. Formula (III)

wherein R₅ each represent a hydrogen atom or a methyl group, n represents an integer of 0 to 6, and an epoxy resin represented by the formula (IV):

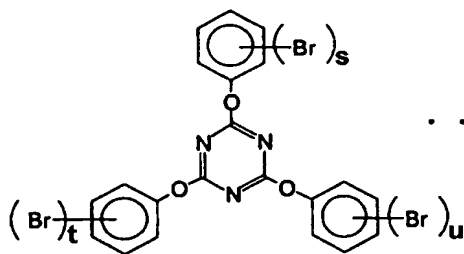


. Formula (IV)

5

wherein p represents an integer of 1 to 5.

34. The resin composition for printed wiring board according to any one of Claims 29 to 33, wherein the composition further comprises, as a flame retardant, at least one selected from the group consisting of 1,2-dibromo-4-(1,2-dibromoethyl)cyclohexane, tetrabromocyclooctane, hexabromocyclododecane, bis(tribromophenoxy)ethane, a brominated triphenylcyanurate represented by the formula (VII):



. Formula (VII)

15

wherein s, t and u each represent an integer of 1 to 5, and each may be the same value or different from each other,

a brominated polyphenylene ether and a brominated polystyrene.

20

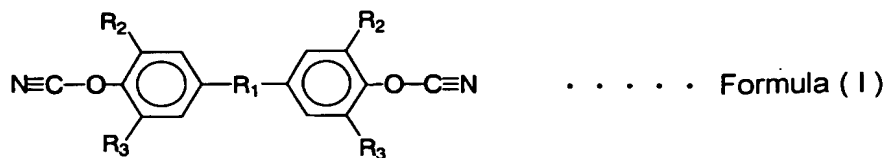
35. The resin composition for printed wiring board according to any one of Claims 29 to 34, wherein the composition further comprises an antioxidant.

36. A resin composition for printed wiring board which comprises an epoxy/phenol-modified cyanate ester oligomer obtained by reacting a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, an epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule, and a monovalent phenol compound, and a monovalent phenol compound.

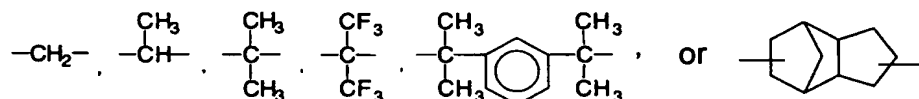
37. The resin composition for printed wiring board according to Claim 36, wherein the epoxy/phenol-modified cyanate ester oligomer is an epoxy/phenol-modified cyanate ester oligomer obtained by reacting 100 parts by weight of the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, 10 to 250 parts by weight of the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule, and 0.4 parts by weight or more and less than 60 parts by weight of the monovalent phenol compound, and the monovalent phenol compound is additionally contained in a total amount of 2 to 60 parts by weight which is the sum of the amount with the monovalent phenol compound to be used for formation of the epoxy/phenol-modified cyanate ester oligomer.

38. The resin composition for printed wiring board according to Claim 36 or 37, wherein the composition further comprises a polyphenylene ether resin.

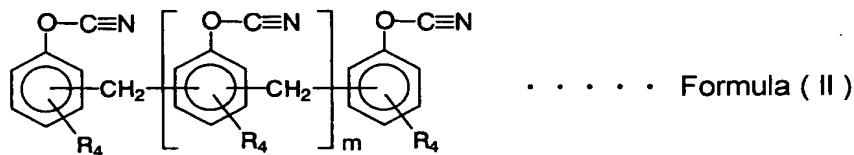
39. The resin composition for printed wiring board according to any one of Claims 36 to 38, wherein the cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof is at least one selected from the group consisting of a cyanate ester compound represented by the formula (I):



wherein R_1 represents



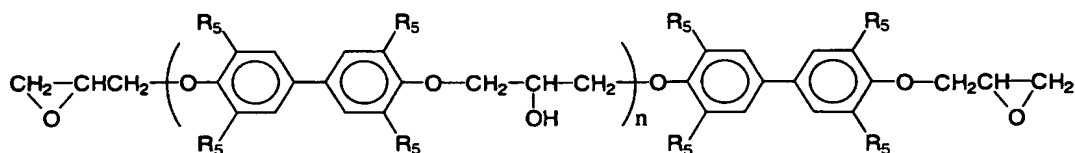
R_2 and R_3 each represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, and each may be the same or different from each other, and a cyanate ester compound represented by the formula (II):



wherein R_4 represents a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, m represents an integer of 1 to 7,

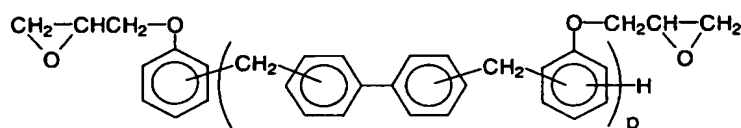
and a prepolymer thereof.

40. The resin composition for printed wiring board according to any one of Claims 36 to 39, wherein the epoxy resin having a biphenyl structure in the molecule in the epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule is at least one selected from the group consisting of an epoxy resin represented by the formula (III):



. Formula (III)

wherein R₅ each represent a hydrogen atom or a methyl group, n represents an integer of 0 to 6, and an epoxy resin represented by the formula (IV):

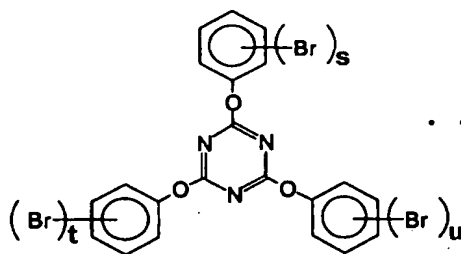


. Formula (IV)

5

wherein p represents an integer of 1 to 5.

41. The resin composition for printed wiring board according to any one of Claims 36 to 40, wherein the composition further comprises, as a flame retardant, at least one selected from the group consisting of 1,2-dibromo-4-(1,2-dibromoethyl)cyclohexane, tetrabromocyclooctane, hexabromocyclododecane, bis(tribromophenoxy)ethane, a brominated triphenylcyanurate represented by the formula (VII):



. Formula (VII)

15

wherein s, t and u each represent an integer of 1 to 5, and each may be the same value or different from each other,

a brominated polyphenylene ether and a brominated polystyrene.

20

42. The resin composition for printed wiring board according to any one of Claims 36 to 41, wherein the composition further comprises an antioxidant.

43. A resin composition for printed wiring board which comprises a phenol-modified cyanate ester oligomer which is obtained by reacting a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereofa monovalent phenol compound in the presence of a polyphenylene ether resin.
44. A resin composition for printed wiring board which comprises an epoxy/phenol-modified cyanate ester oligomer obtained by reacting a cyanate ester compound having 2 or more cyanate groups in the molecule and/or a prepolymer thereof, a monovalent phenol compound and an epoxy resin containing at least one kind of an epoxy resin having a biphenyl structure in the molecule in the presence of a polyphenylene ether resin.
45. A resin varnish for a printed wiring board obtained by dissolving or dispersing the resin composition for printed wiring board according to any one of Claims 1 to 44 in a solvent.
46. A prepreg for a printed wiring board which is obtained by impregnating the resin composition for printed wiring board according to any one of Claims 1 to 44 or the resin varnish for a printed wiring board according to Claim 45 into a substrate, and drying at 80 to 200°C.
47. A metal clad laminated board which is obtained by laminating one or more of the prepreg for a printed wiring board according to Claim 46, laminating a metal foil on at least one surface thereof and pressurizing under heating.